



# ANNUAL COMPLIANCE REPORT FOR INDIANA PUBLIC WATER SUPPLY SYSTEMS

JANUARY 1, 1996 – DECEMBER 31, 1996

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## **INTRODUCTION**

The United States Environmental Protection Agency (USEPA) established the Public Water Supply Supervision Program (PWSSP) under the authority of the 1974 Safe Drinking Water Act (SDWA) to ensure the quality of drinking water for human consumption. The SDWA allows states to seek EPA approval to administer their own PWSS programs, which is referred to as primacy. The State of Indiana received primacy for the Public Water Supply Supervision Program in 1992.

The 1996 Amendments to the Safe Drinking Water Act require each state with primacy to prepare an annual report of the violations to the national primary drinking water regulations by public water systems. Section 1414(c)(3)(A) of the SDWA requires states to submit an annual summary of violations of a maximum contaminant level (MCL), treatment techniques, variances and exemptions<sup>1</sup>, and significant monitoring violations. This report is intended to satisfy this annual reporting requirement for the State of Indiana for the time period January 1, 1996 through December 31, 1996.

## **INDIANA PUBLIC WATER SUPPLY SUPERVISION PROGRAM**

The Indiana Department of Environmental Management (IDEM), Office of Water Management, Drinking Water Branch is the primary administrator of the Indiana Public Water Supply Supervision Program. The Drinking Water Branch (DWB) maintains an inventory of all public water supplies (PWSs). Each PWS is

required to collect drinking water samples for various contaminants. This water sample analysis data is compiled to ensure that public water systems do not exceed the maximum contaminant levels established by the State of Indiana and the Environmental Protection Agency. The Drinking Water Branch verifies that the PWSs monitor their water for the required contaminants at the appropriate intervals specified by EPA and IDEM. The data is stored in the Indiana Public Water Supply Compliance Database. Compliance assistance is offered to systems to ensure that PWSs understand their monitoring requirements and encourage timely reporting. The DWB staff members provide technical assistance to owners and operators and conduct sanitary surveys of PWSs to ensure compliance with the primary drinking water regulations. An operator certification program is in place to certify individuals that are responsible for the operation and maintenance of a public water system. The DWB also reviews plans and issues construction permits to ensure that new water system facilities will produce safe and adequate drinking water. The IDEM Office of Enforcement provides support to the PWSSP by issuing formal enforcement actions when necessary to address significant violations. The Indiana State Department of Health maintains a program to certify laboratories that conduct the analysis of drinking water contaminants.

The DWB submits quarterly reports to the EPA which provide PWS inventory statistics, site visit data, maximum contaminant level or treatment technique violations, monitoring and reporting violations, and the related enforcement actions pertaining to the violations. Data for these reports is extracted from the Indiana PWS Compliance Database and is submitted electronically to the federal version of the Safe Drinking Water Information System.

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<sup>1</sup> IDEM did not issue any variances or exemptions in 1996. Therefore, variances or exemptions are not addressed in this summary report.

## PUBLIC WATER SYSTEM DEFINITIONS

A public water system (PWS) is defined as a system that provides water via piping or other constructed conveyances for human consumption to at least 15 service connections or serves an average of at least 25 people for at least 60 days each year. There are three types of PWSs: community, nontransient noncommunity, and transient noncommunity public water systems.

### *Community Water System (CWS)*

A PWS that serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents. Examples of a CWS include towns, subdivisions, and mobile home parks.

### *Nontransient Noncommunity System (NTNC)*

A PWS that is not a community water system that serves at least 25 of the same persons for over six months per year. Examples of a NTNC system include schools, factories, offices, and daycare centers.

### *Transient Noncommunity System (TNC)*

A PWS that is not a community water system that serves at least 25 people daily, however it serves the same individuals for less than 6 months. Examples of a TNC system include campgrounds, churches, restaurants, and rest stops.

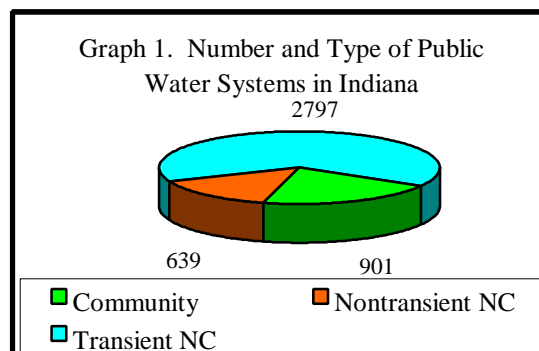
Public water systems can further be defined by the source of the water that is distributed. The source types used to describe a system are surface water, ground water, and purchased water.

Within each category a system may be classified according to size. The following table illustrates the classification of public water supplies by size.

PWS Size Categories	
Size	Population
Small	0-3,300
Medium	3,301-10,000
Large	>10,000

## PUBLIC WATER SUPPLY INVENTORY

There are approximately 4,337 active public water supplies in Indiana. Graph 1 shows the distribution of public water systems by the system type.

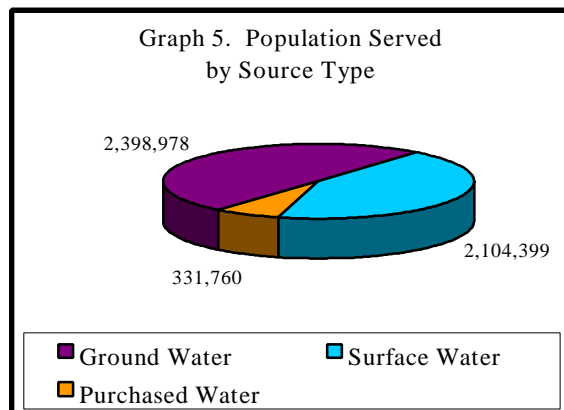
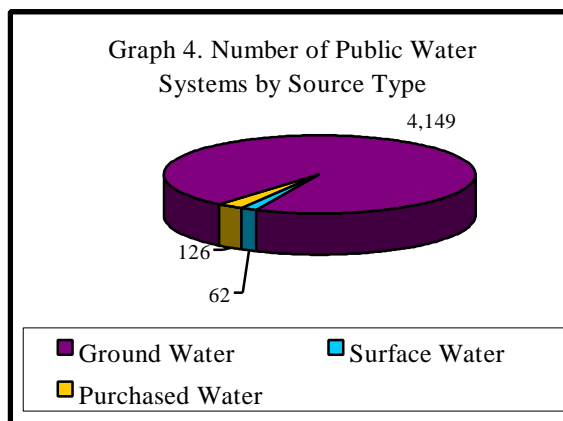
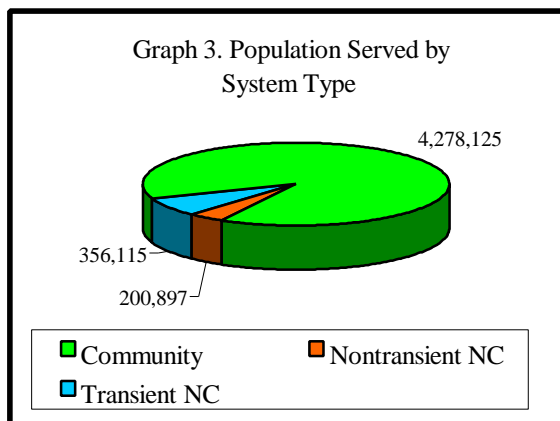
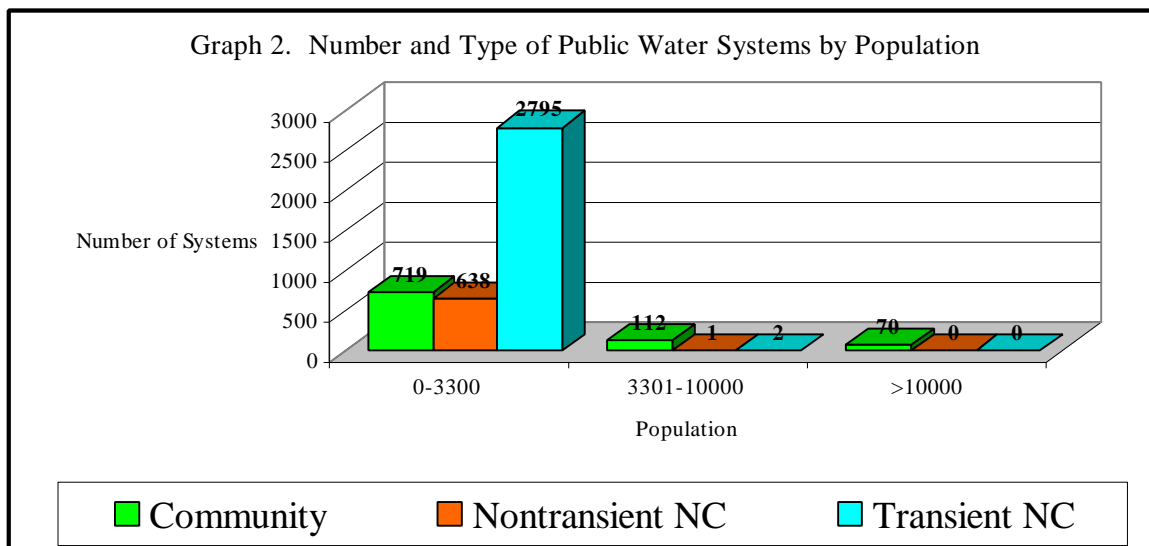


The size distribution of systems varies within each system type category as illustrated in Graph 2. Although most of the systems are classified as small transient systems, the majority of the total population is served by water from community water systems as illustrated in Graph 3.<sup>2</sup>

<sup>2</sup> In actuality, there may be an overlap in the population data since a consumer of a community public water system may also be a consumer of nontransient noncommunity system. For example, a child who lives in a subdivision, which is a community water system, may also be a consumer at school, which could be classified as a nontransient noncommunity water system.

Drinking water in Indiana comes from ground water sources via wells or surface water sources such as lakes or rivers. Some public water systems purchase water from other public water supplies and distribute the water to their customers. Ninety-six percent

(96%) of all public water systems are classified as ground water systems. However, only fifty percent (50%) of the total population is served by ground water systems. See Graphs 4 & 5.



## DRINKING WATER MONITORING REQUIREMENTS

The Safe Drinking Water Act mandates the monitoring and reporting of various bacteriological and chemical contaminants that may be found in drinking water. The contaminants are categorized as total coliform, nitrate, inorganic chemicals (IOCs), volatile organic compounds (VOCs), synthetic organic compounds (SOCs), radionuclides, lead and copper, and total trihalomethanes. Levels of these contaminants in drinking water are compared to maximum contaminant levels (MCLs)<sup>3</sup> which are set by EPA and the State to ensure that the water is safe for human consumption. *See Appendix A for a list of MCLs and action levels for all of the regulated contaminants.* If the level of a contaminant in a public water supply is confirmed to have exceeded a maximum contaminant level, the system has violated the provisions of the Safe Drinking Water Act and is assigned a MCL violation.

The SDWA also requires systems to comply with the provisions of the Surface Water Treatment Rule (SWTR) and the Lead and Copper Rule. These rules establish regulations pertaining to treatment techniques that require systems to properly treat their water. If a PWS fails to properly treat its water or cannot control the levels of such contaminants as bacteria, viruses, parasitic microorganisms, lead, or copper the system has violated the provisions of the Safe Drinking Water Act and is assigned a treatment technique (TT) violation.

The contaminants and parameters that must be monitored depend on the system type, population served, and source type of

the PWS. The frequency of the sampling varies depending on the characteristics of each contaminant and the apparent risk to human health. Acute contaminants, such as total coliform and nitrate, are contaminants that may pose an immediate risk to human health. Non-acute contaminants, which include all of the remaining regulated contaminants, are contaminants that may have long-term health effects if consumed at certain levels for extended periods of time. For example, a transient ground water system must monitor for bacteriological contaminants and nitrate only. However, a large community surface water system must monitor for all of the contaminants and fulfill the filtration and disinfection requirements of the SWTR. *See Appendix B, Table A for a summary of the contaminant groups that must be monitored by each type of water system. Tables B and C provide a summary of the monitoring frequencies by contaminant group.* If a PWS fails to monitor at the designated frequency or fails to submit the results to the DWB, the system has violated the provisions of the Safe Drinking Water Act and is assigned a monitoring and reporting (M/R) violation.

If a public water system exceeds a maximum contaminant level, fails to properly treat its water, or does not monitor according to a prescribed schedule, the PWS must notify its customers of the violation and work to correct the problem. Public notification is a requirement of the SDWA. It serves to inform the users of a public water supply of the nature of the violation, what steps are being taken to correct the problem, what the potential adverse health effects may be, etc. Examples of public notices may be radio or television announcements, newspaper notices, handbills delivered door-to-door, or inserts in water bills, to name a few.

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<sup>3</sup> The Lead and Copper Rule utilizes action levels rather than MCLs to trigger treatment technique requirements.

## MONITORING VIOLATION SUMMARY

Appendix C provides a summary of the violations for all of the regulated drinking water contaminants. The summary includes the MCL, treatment technique, and significant monitoring and reporting violations for the 1996 calendar year (January 1, 1996-December 31, 1996). The total number of violations is reported for each contaminant and each violation type. The total number of systems that are credited with these violations is also included in order to account for the fact that often one system may have multiple violations.<sup>4</sup>

Graphs 6, 7, and 8 illustrate the number of MCL, M/R, and TT violations that occurred in 1996 for each contaminant group by water system type. Table 1 summarizes the data used to generate these graphs. The transient systems tend to have the highest noncompliance rate. In 1996, approximately thirty-six percent (36%) percent of the transient systems failed to monitor and report for one or more quarters

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<sup>4</sup> The data used to generate the numbers for this table were extracted from the Federal Safe Drinking Water Information System (SDWIS/FED) database and additional updated information from the Indiana Public Water Supply Compliance Database. Every effort is made to match the data in both databases. However, due to the enormous volume of violations from transient systems for quarterly bacteriological monitoring, and the lack of resources at the state level, these violations are not reported to SDWIS/FED. These monitoring and reporting violations are nonetheless tracked at the state level. Bacteriological MCL violations for transient systems are tracked and investigated by DWB staff. Reporting of bacteriological violations of transient systems is not included in our commitment to EPA related to the quarterly reporting of information to SDWIS/FED.

of sampling for the bacteriological contaminants. Approximately twenty percent (20%) of transient systems did not sample for nitrate in 1996, compared to only 6% of the community and nontransient noncommunity systems that failed to monitor for nitrate. The lower compliance rates for monitoring and reporting may be attributed to the fact that these systems, such as restaurants, campgrounds, hotels, or churches are primarily engaged in a business other than water supply. Community water systems serving more than 100 people are required to have certified operators who are trained and knowledgeable about the operation, maintenance, and requirements to manage the water system and its facilities. Owners of transient systems are often unaware of the requirements and the turnover rate among those responsible for sampling is high. The DWB staff attempt to minimize these problems by sending letters that remind systems of the monitoring that is due. An inventory verification letter is also sent to systems biannually to keep the PWS address and contact information as accurate as possible.

Appendix D contains a list of all of the systems that were assigned M/R, MCL, and TT violations. These lists were generated from the current Indiana Public Water Supply Compliance Database and reconciled with data from the SDWIS/FED database. This information was used to create the Appendix C Violations Table referred to above.

The percent of systems that have complied with the monitoring and reporting requirements for the contaminant groups other than total coliform are all above 90%. The high compliance rates are the positive result of proactive efforts of the PWSs and various compliance assistance efforts within the Drinking Water Branch.

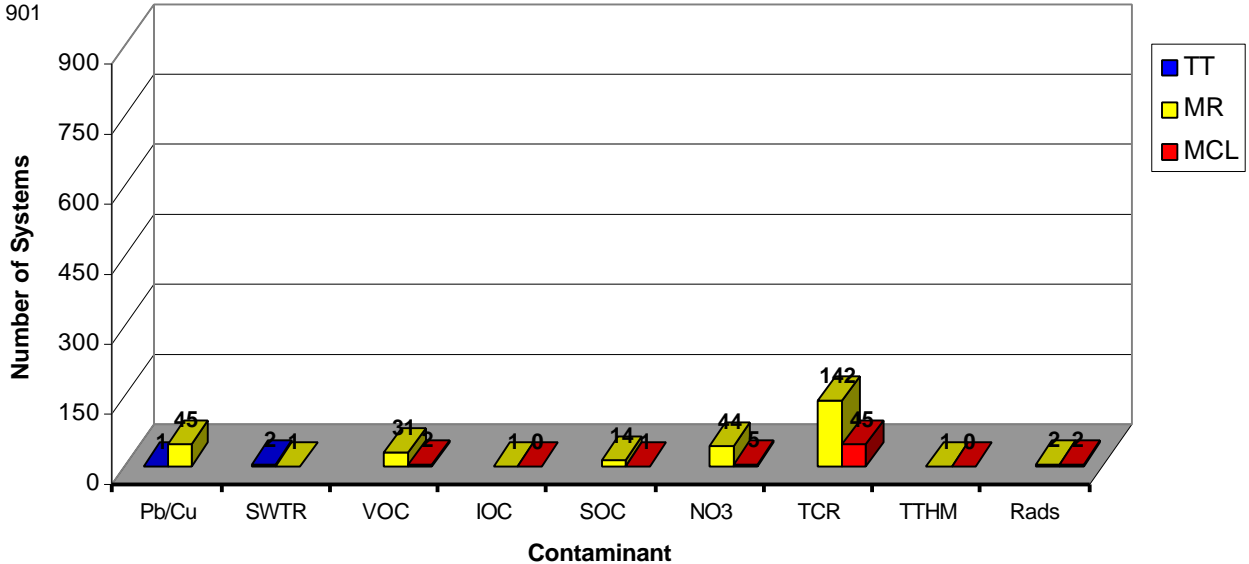
**Table 1. Violations by Contaminant Group  
for Indiana Public Water Systems**

		Pb/Cu	SWTR	VOC	IOC	SOC	NO3	TCR	TTHM	Rads
Community	MR	45	1	31	1	14	44	142	1	2
	MCL			2	0	1	5	45	0	2
	TT	1	2							
Nontransient Noncommunity	MR	20	3	17	2	14	38	117	0	0
	MCL			2	1	0	3	44	0	0
	TT	0	1							
Transient Noncommunity	MR		1				576	1019		
	MCL						9	171		
	TT		2							

**Graph 6. Violations by Contaminant Group  
for Indiana Community Water Systems**

Total Number of Community  
Systems = 901

**1996**

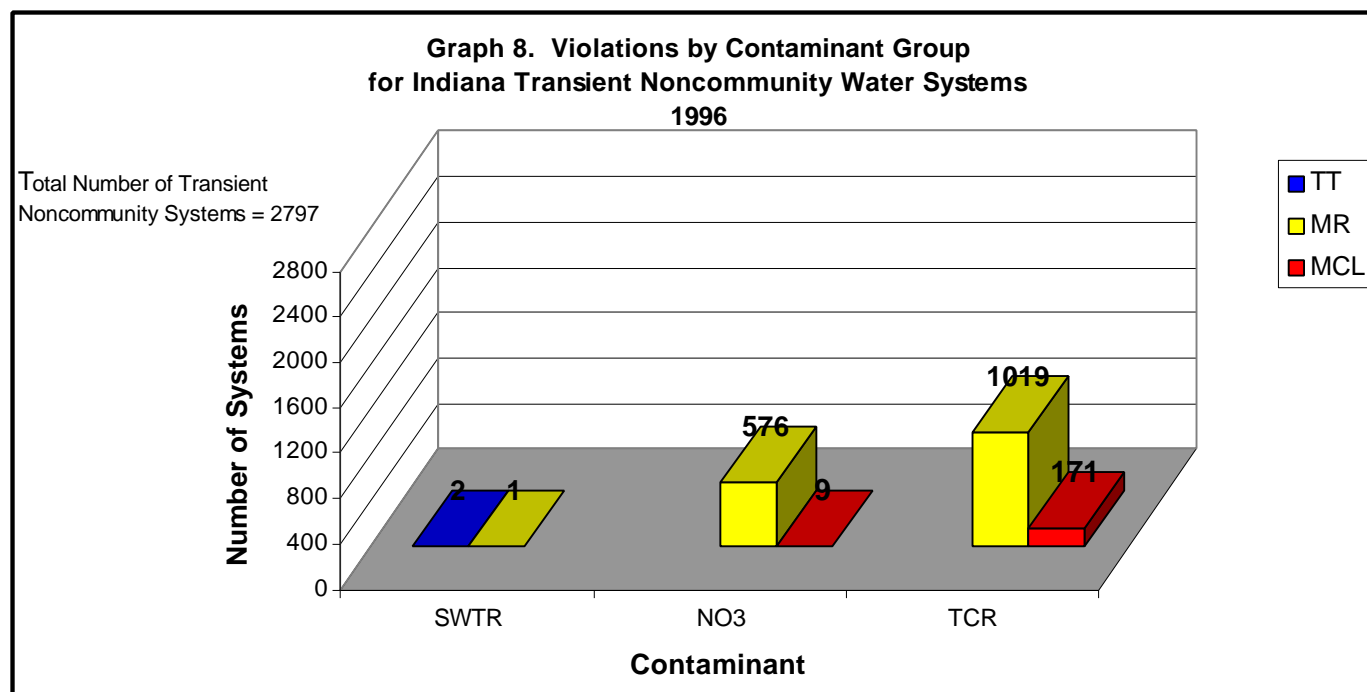
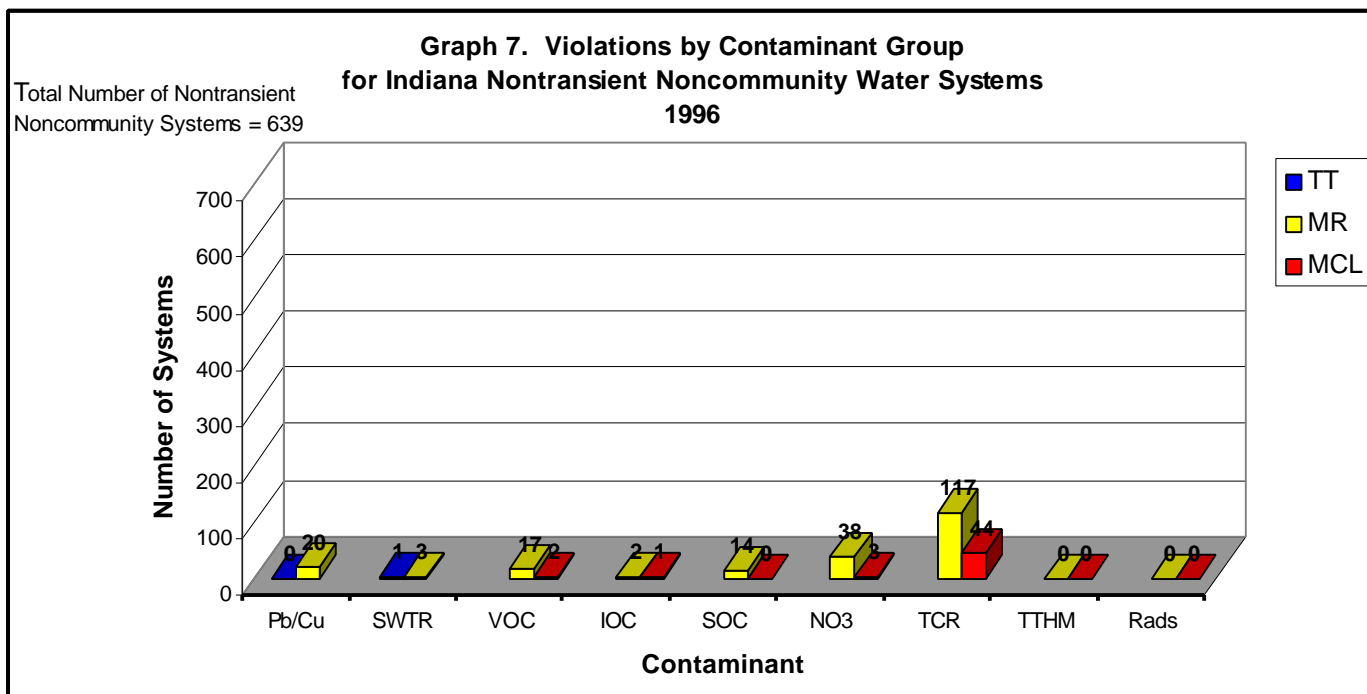


**LEGEND**

TT=Treatment Technique Violation  
Pb/Cu=Lead and Copper  
IOC=Inorganic Chemicals  
TCR=Total Coliform Rule

MR=Monitoring/Reporting Violation  
SWTR=Surface Water Treatment Rule  
SOC=Synthetic Organic Compounds  
TTHM=Total Trihalomethanes

MCL=Maximum Contaminant Level Violation  
VOC=Volatile Organic Compounds  
NO3=Nitrate  
Rads=Radionuclides



#### LEGEND

TT=Treatment Technique Violation  
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MCL=Maximum Contaminant Level Violation  
VOC=Volatile Organic Compounds  
NO3=Nitrate  
Rads=Radionuclides

## COMPLIANCE ASSISTANCE EFFORTS

The Drinking Water Branch assists public water system owners and operators in a variety of ways in order to promote compliance with the drinking water regulations. Assistance is both proactive and reactive and comes in the form of site visits, correspondence, telephone conversations, and educational presentations and materials.

**Site Visits** Staff from the Drinking Water Branch personally assist the owners or operators with issues related to their public water supplies. The staff member may conduct various inspections such as sanitary surveys, vulnerability assessments, or well site surveys.

**Sanitary Survey:** *An on-site inspection of the water source, facilities, equipment, construction, and operation and maintenance for producing and distributing safe drinking water.*

**Vulnerability Assessment:** *An evaluation of surrounding land use to determine the potential for contamination from VOCs and SOCs to a public water supply.*

**Well Site Survey:** *An on-site review of the potential sources of contamination before a new well is permitted to be drilled.*

If a system is having water quality problems, an inspector may contact the facility or visit the site to help the operator investigate the cause of the problem and provide suggestions to mitigate the problem. For example, if a system exceeds the maximum contaminant level for total coliform or fecal coliform, an inspector will follow-up with the system within twenty-four (24) hours. The inspector may

physically visit the site, or at a minimum, contact the operator via telephone.

The following site visits were conducted in 1996 by the Drinking Water Branch staff:

<b>Sanitary Surveys</b>	<b>308</b>
<b>Vulnerability Assessments</b>	<b>62</b>
<b>Well Site Surveys</b>	<b>59</b>
<b>Technical Assistance Visits</b>	<b>252</b>
<b>MCL Follow-up Visits</b>	<b>130</b>

**Courtesy Reminder Letters** To promote timely monitoring and reporting of the required contaminants, courtesy reminder letters are sent to water supplies to remind the operators of upcoming monitoring deadlines. The frequency and timeliness of the distribution of these letters is dependent on staff workload, so these letters are not guaranteed, nor promised to public water supplies.

**Reminder Letters** If a system does not monitor for a specific contaminant and/or fails to submit the report to the DWB, a reminder letter is sent to request a copy of the results. If the system does not have results for the required monitoring, they must notify their customers. An example of a public notification with the appropriate language is provided with the reminder letter to assist systems with the notification process.

**Monitoring Waivers** The Drinking Water Branch offers waivers for certain chemical contaminants to community and noncommunity nontransient public water supplies. The waivers allow for a reduction of the minimum base monitoring requirements of the drinking water regulations if the system meets particular criteria. These reductions are granted for a limited time period and must be reevaluated periodically to ensure that conditions have not changed. The criteria to qualify for a

waiver differs depending on the contaminant involved, past sampling results, the use of contaminants in the area, and the geological setting of the water source. The use of waivers can reduce the financial impact of sampling and increase compliance with the drinking water regulations. It is estimated that \$13.5 million in monitoring costs were saved by systems in Indiana who were granted waivers during the first compliance period (January 1, 1993 – December 31, 1995). These cost savings were achieved while still ensuring safe drinking water.

*Outreach* A workgroup was formed to enhance compliance assistance efforts to the regulated community from the Drinking Water Branch. Staff members get involved in workshops to explain new monitoring requirements or to provide information for systems to help them understand the drinking water regulations. The DWB coordinates with various associations to provide speakers and information booths at conferences in order to inform the public and the regulated community of upcoming regulations, deadlines, and issues.

## CONCLUSION

The 1996 Amendments to the Safe Drinking Water Act mandate that states with primacy submit an annual report of violations of drinking water regulations by public water supplies. This report summarizes the violations by public water supplies in the State of Indiana from January 1, 1996 through December 31, 1996 and serves to fulfill the annual reporting requirement.

Approximately ninety-three percent (93%) of all of the public water supplies met the requirements of the Safe Drinking Water Standards in 1996. Although 7% of the systems violated a maximum contaminant

level or treatment technique in 1996, many systems worked with the DWB to resolve their problems. To date, only 0.2% of the systems that violated the standards in 1996 have not resolved their maximum contaminant level issues.

IDEM's objective as stated in the 1996-1997 IDEM/EPA Performance Partnership Agreement, is to decrease the percentage of public water supplies that do not meet the Safe Drinking Water Standards to five percent (5%) by 2002.<sup>5</sup> IDEM will target PWSs with violations to assess the circumstances leading to noncompliance. IDEM will then use a balanced compliance strategy to improve the capacity of the system to comply with the SDWA. State revolving fund monies will be available to assist in this effort. Enforcement will be used when the violations are serious or recurrent in nature. With continuing education, increased outreach efforts, state revolving fund loans, technical assistance, and enforcement actions when necessary, this objective is within reach. IDEM is committed to ensuring that all Indiana citizens have an adequate supply of clean, safe drinking water.

If you have any questions concerning this report, please contact the Drinking Water Branch at (317) 308-3280.

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<sup>5</sup> The objective in the 1997-1998 Environmental Performance Partnership Agreement is revised to state: "By 2005, 99 percent of the population served by public water supply systems will have water that meets Safe Drinking Water standards."

# APPENDICES

## APPENDIX A

REGULATED CHEMICAL DRINKING WATER CONTAMINANTS  
MAXIMUM CONTAMINANT LEVELS

## APPENDIX B

TABLE A – MONITORING REQUIREMENTS FOR PUBLIC WATER SUPPLIES

TABLE B – MONITORING FREQUENCIES FOR PUBLIC WATER SUPPLIES  
TRANSIENT WATER SYSTEMS

TABLE C – MONITORING FREQUENCIES FOR PUBLIC WATER SUPPLIES  
COMMUNITY AND NONTRANSIENT NONCOMMUNITY WATER SYSTEMS

## APPENDIX C

VIOLATIONS TABLE

## APPENDIX D

(AVAILABLE UPON REQUEST)

SUMMARY OF VIOLATIONS/LIST OF SYSTEMS WITH VIOLATIONS

LEAD AND COPPER  
SURFACE WATER TREATMENT RULE  
VOLATILE ORGANIC COMPOUNDS  
INORGANIC CHEMICALS  
SYNTHETIC ORGANIC COMPOUNDS  
NITRATE  
TOTAL COLIFORM RULE  
TOTAL TRIHALOMETHANES  
RADIONUCLIDES

# APPENDIX A

## REGULATED CHEMICAL DRINKING WATER CONTAMINANTS

### MAXIMUM CONTAMINANT LEVELS

Contaminant	MCL	Contaminant	MCL	Contaminant	MCL
Inorganic Chemicals (IOCs)	mg/l	Volatile Organic Compounds (VOCs)	ug/l	Synthetic Organic Compounds (SOCs)	ug/l
Antimony	0.006	1,1-Dichloroethylene	7	2,4-D	70
Arsenic	0.05	1,1,1-Trichloroethane	200	2,4,5-TP (Silvex)	50
Barium	2	1,1,2-Trichloroethane	5	Alachlor	2
Beryllium	0.004	1,2-Dichloroethane	5	Atrazine	3
Cadmium	0.005	1,2-Dichloropropane	5	Benzo(a)pyrene	0.2
Chromium	0.1	1,2,4-Trichlorobenzene	70	Carbofuran	40
Cyanide (free)	0.2	Benzene	5	Chlordane	2
Fluoride (Adjusted) *	2	Carbon Tetrachloride	5	Dalapon	200
Fluoride (Natural) *	4	Cis-1,2-Dichloroethylene	70	Di(2-ethylhexyl)adipate	400
Mercury	0.002	Dichloromethane	5	Di(2-ethylhexyl)phthalate	6
Nickel	---	Ethylbenzene	700	Dibromochloropropane (DBCP)	0.2
Selenium	0.05	Monochlorobenzene	100	Dinoseb	7
Thallium	0.002	o-Dichlorobenzene	600	Dioxin (2,3,7,8-TCDD)	3X10 <sup>-5</sup>
		p-Dichlorobenzene	75	Diquat	20
Sodium *	No MCL	Styrene	100	Endothall	100
		Tetrachloroethylene	5	Endrin	0.2
<b>Asbestos</b>		Toluene	1000	Ethylene Dibromide (EDB)	0.05
Asbestos	7 MFL**	Trans-1,2-Dichloroethylene	100	Glyphosate	700
		Trichloroethylene	5	Heptachlor	0.4
<b>Nitrate</b>		Vinyl Chloride	2	Heptachlor epoxide	0.2
Nitrate	10	Xylenes (total)	10,000	Hexachlorobenzene	1
Nitrite	1			Hexachlorocyclopentadiene	50
Total Nitrate & Nitrite	10			Lindane	0.2
		Total Trihalomethanes **** (for systems >10,000)	100	Methoxychlor	40
<b>Lead &amp; Copper</b>				Oxamyl (Vydate)	200
Lead Action Level	0.015			PCBs	0.5
Copper Action Level	1.3			Pentachlorophenol	1
				Picloram	500
<b>Radionuclides *</b>	pCi/l			Simazine	4
Gross Alpha	15			Toxaphene	3
Gross Alpha Action Level	5				
Radium-226 Action Level	3				
Radium-226 & Radium-228 (combined)	5				
Manmade	***				

\* Community Water Systems Only

\*\* MFL=million fibers/liter > 10 micron

\*\*\* The average annual concentration of beta particle and photon radioactivity from manmade radionuclides in drinking water shall not produce an annual dose equivalent to the total body or any internal organ greater than four (4) millirem per year.

\*\*\*\* The sum of the concentrations of bromodichloromethane, dibromochloromethane, tribromomethane (bromoform), and trichloromethane (chloroform).

## APPENDIX B

**Table A - Monitoring Requirements for Public Water Supplies**

	APPLICABLE RULE											
SYSTEM TYPE	TCR	Nitrate	Pb/Cu	IOC	VOC	SOC	Rads	TTHM*	SWTR	Asbestos	Sodium	Fluoride
<b>Community</b>												
Surface Water	X	X	X	X	X	X	X	X	X	X	X	X
Groundwater	X	X	X	X	X	X	X	X		X	X	X
Purchased Water	X		X					X**		X		
<b>Nontransient</b>												
Surface Water	X	X	X	X	X	X		X	X	X		
Groundwater	X	X	X	X	X	X		X		X		
Purchased Water	X		X							X		
<b>Transient</b>												
Surface Water	X	X							X			
Groundwater	X	X										
Purchased Water	X											

\*For systems with a population >10,000

\*\*For systems with a population >10,000 and who re-chlorinate the water

**Table B - Monitoring Frequencies for Public Water Systems  
Transient Noncommunity Water Systems**

Contaminant Group	Source Type	Sampling Frequency *
Total Coliform Rule	S	All systems served by surface water must monitor monthly. The number of samples required is dependent on population.
	G, P	Transient Noncommunity systems must sample quarterly. The number of samples required depends on the population served.
Nitrate	S	Once per quarter
	G	Once per year
Surface Water Treatment Rule	S	Daily turbidity readings; daily and monthly disinfection residual levels

\* This table does not take into account detections, MCLs, reductions, or waivers.

Source Types: S=Surface, G=Ground, P=Purchased

**Table C - Monitoring Frequencies for Public Water Supplies  
Community and Nontransient Noncommunity Water Systems**

Contaminant Group	Source Type	Sampling Frequency *
Total Coliform Rule	S	All systems served by surface water must monitor monthly. The number of samples required is dependent on population.
	G, P	Community systems must sample monthly. The number of samples required depends on the population served. Nontransient Noncommunity systems must sample quarterly. The number of samples required depends on the population served.
Nitrate	S	Once per quarter
	G	Once per year
Lead/Copper	S, G, P	Two consecutive six month periods, followed by three years of annual sampling, then once every three years thereafter. The number of samples is dependent on population.
Inorganic Chemicals	S	Once per year
	G	Once every three years
Volatile Organic Compounds	S	Once per quarter for four quarters in the first year, then once per year
	G	Once per quarter for four quarters, repeated every three years
Synthetic Organic Compounds	S,G	Once per quarter for four consecutive quarters during the first compliance period
Radionuclides	S, G	Once per quarter for four consecutive quarters, every four years
Total Trihalomethanes	S, G, P	Only required for systems that chlorinate and have a population >10,000 Four samples per quarter per treatment plant
Surface Water Treatment Rule	S	Daily turbidity readings; daily and monthly disinfection residual levels
Asbestos	S, G, P	One sample every nine years
Sodium	S	Once per year (Community Systems Only)
	G	Once every three years (Community Systems Only)

\* This table does not take into account detections, MCLs, reductions, or waivers.

Source Types: S=Surface, G=Ground, P=Purchased

**Appendix C**  
**Violations Table**  
(with SDWIS Codes)

<b>State:</b> INDIANA	
<b>Reporting Interval:</b>	January 1, 1996 through December 31, 1996

SDWIS Codes		MCL (mg/l) <sup>1</sup>	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	
	<b>Organic Contaminants</b>							
2981	1,1,1-Trichloroethane	0.2	N/A	N/A			50	45
2977	1,1-Dichloroethylene	0.007	N/A	N/A			50	45
2985	1,1,2-Trichloroethane	.005	N/A	N/A			50	45
2378	1,2,4-Trichlorobenzene	.07	N/A	N/A			51	46
2931	1,2-Dibromo-3-chloropropane (DBCP)	0.0002	N/A	N/A			11	7
2980	1,2-Dichloroethane	0.005	N/A	N/A			50	45
2983	1,2-Dichloropropane	0.005	N/A	N/A			50	45
2063	2,3,7,8-TCDD (Dioxin)	3x10 <sup>-8</sup>	N/A	N/A			6	4
2110	2,4,5-TP	0.05	N/A	N/A			13	9
2105	2,4-D	0.07	N/A	N/A			20	13
2265	Acrylamide				N/A	N/A		

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SDWIS Codes		MCL (mg/l) <sup>1</sup>	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	
2051	Alachlor	0.002	N/A	N/A			21	15
2050	Atrazine	0.003	2	1			23	17
2990	Benzene	0.005	N/A	N/A			54	48
2306	Benzo[a]pyrene	0.0002	N/A	N/A			11	7
2046	Carbofuran	0.04	N/A	N/A			12	8
2982	Carbon tetrachloride	0.005	1	1			50	45
2959	Chlordane	0.002	N/A	N/A			11	7
2380	cis-1,2-Dichloroethylene	0.07	N/A	N/A			50	45
2031	Dalapon	0.2	N/A	N/A			12	8
2035	Di(2-ethylhexyl) adipate	0.4	N/A	N/A			11	7
2039	Di(2-ethylhexyl) phthalate	0.006	N/A	N/A			12	8
2964	Dichloromethane	0.005	2	2			50	45
2041	Dinoseb	0.007	N/A	N/A			11	7
2032	Diquat	0.02	N/A	N/A			14	10
2033	Endothall	0.1	N/A	N/A			11	7

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			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	
2005	Endrin	0.002	N/A	N/A			11	7
2257	Epichlorohydrin				N/A	N/A		
2992	Ethylbenzene	0.7	N/A	N/A			53	47
2946	Ethylene dibromide	0.00005	N/A	N/A			11	7
2034	Glyphosate	0.7	N/A	N/A			13	9
2065	Heptachlor	0.0004	N/A	N/A			11	7
2067	Heptachlor epoxide	0.0002	N/A	N/A			11	7
2274	Hexachlorobenzene	0.001	N/A	N/A			11	7
2042	Hexachlorocyclopentadiene	0.05	N/A	N/A			12	8
2010	Lindane	0.0002	N/A	N/A			11	7
2015	Methoxychlor	0.04	N/A	N/A			11	7
2989	Monochlorobenzene	0.1	N/A	N/A			50	45
2968	o-Dichlorobenzene	0.6	N/A	N/A			50	45
2969	para-Dichlorobenzene	0.075	N/A	N/A			50	45

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			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	
2383	Total polychlorinated biphenyls	0.0005	N/A	N/A			6	4
2326	Pentachlorophenol	0.001	N/A	N/A			11	7
2987	Tetrachloroethylene	0.005	N/A	N/A			50	45
2984	Trichloroethylene	0.005	2	1			50	45
2996	Styrene	0.1	N/A	N/A			50	45
2991	Toluene	1	N/A	N/A			54	48
2979	trans-1,2-Dichloroethylene	0.1	N/A	N/A			50	45
2955	Xylenes (total)	10	N/A	N/A			53	47
2020	Toxaphene	0.003	N/A	N/A			11	7
2036	Oxamyl (Vydate)	0.2	N/A	N/A			12	8
2040	Picloram	0.5	N/A	N/A			11	7
2037	Simazine	0.004	N/A	N/A			14	10
2976	Vinyl chloride	0.002	N/A	N/A			50	45

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			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	
2950	Total trihalomethanes	0.10	N/A	N/A			1	1
	Inorganic Contaminants							
1074	Antimony	0.006	N/A	N/A			2	2
1005	Arsenic	0.05	N/A	N/A			2	2
1094	Asbestos	7 million fibers/l ? 10 µm long	N/A	N/A			2	2
1010	Barium	2	2	1			2	2
1075	Beryllium	0.004	N/A	N/A			2	2
1015	Cadmium	0.005	N/A	N/A			2	2
1020	Chromium	0.1	N/A	N/A			2	2
1024	Cyanide (as free cyanide)	0.2	N/A	N/A			2	2
1025	Fluoride	4.0	N/A	N/A			1	1
1035	Mercury	0.002	N/A	N/A			2	2

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			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	
1040	Nitrate	10 (as Nitrogen)	30	17			663	658
1041	Nitrite	1 (as Nitrogen)	N/A	N/A			N/A	N/A
1045	Selenium	0.05	N/A	N/A			2	2
1085	Thallium	0.002	N/A	N/A			2	2
1038	Total nitrate and nitrite	10 (as Nitrogen)	N/A	N/A			N/A	N/A
	Radionuclide MCLs							
4000	Gross alpha	15 pCi/l	N/A	N/A			4	1
4010	Radium-226 and radium-228	5 pCi/l	3	2			1	1
4101	Gross beta	4 mrem/yr	N/A	N/A			N/A	N/A
	Total Coliform Rule							
21	Acute MCL violation	Presence	13	13				
22	Non-acute MCL violation	Presence	269	247				

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			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	
23,25	Major routine and follow up monitoring						2419	1278
28	Sanitary survey						N/A	N/A
	Surface Water Treatment Rule							
	Filtered systems							
36	Monitoring, routine/repeat						8	5
41	Treatment techniques				6	5		
	Unfiltered systems							
31	Monitoring, routine/repeat						N/A	N/A
42	Failure to filter				N/A	N/A		
	Lead and Copper Rule							
51	Initial lead and copper tap M/R						44	31

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			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	
52	Follow-up or routine lead and copper tap M/R						34	34
58,62	Treatment Installation				N/A	N/A		
65	Public education				1	1		

1. Values are in milligrams per liter (mg/l), unless otherwise specified.

### Definitions for Violations Table

The following definitions apply to the Summary of Violations table.

**Filtered Systems:** Water systems that have installed filtration treatment [40 CFR 141, Subpart H].

**Inorganic Contaminants:** Non-carbon-based compounds such as metals, nitrates, and asbestos. These contaminants are naturally-occurring in some water, but can get into water through farming, chemical manufacturing, and other human activities. EPA has established MCLs for 15 inorganic contaminants [40 CFR 141.62].

**Lead and Copper Rule:** This rule established national limits on lead and copper in drinking water [40 CFR 141.80-91]. Lead and copper corrosion pose various health risks when ingested at any level, and can enter drinking water from household pipes and plumbing fixtures. States report violations

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of the Lead and Copper Rule in the following six categories:

*Initial lead and copper tap M/R:* SDWIS Violation Code 51 indicates that a system did not meet initial lead and copper testing requirements, or failed to report the results of those tests to the State.

*Follow-up or routine lead and copper tap M/R:* SDWIS Violation Code 52 indicates that a system did not meet follow-up or routine lead and copper tap testing requirements, or failed to report the results.

*Treatment installation:* SDWIS Violation Codes 58 AND 62 indicate a failure to install optimal corrosion control treatment system (58) or source water treatment system (62) which would reduce lead and copper levels in water at the tap. [One number is to be reported for the sum of violations in these two categories].

*Public education:* SDWIS Violation Code 65 shows that a system did not provide required public education about reducing or avoiding lead intake from water.

**Maximum Contaminant Level (MCL):** The highest amount of a contaminant that EPA allows in drinking water. MCLs ensure that drinking water does not pose either a short-term or long-term health risk. MCLs are defined in milligrams per liter (parts per million) unless otherwise specified.

**Monitoring:** EPA specifies which water testing methods the water systems must use, and sets schedules for the frequency of testing. A water system that does not follow EPA's schedule or methodology is in violation [40 CFR 141].

States must report monitoring violations that are significant as determined by the EPA Administrator and in consultation with the States. For purposes of this report, significant monitoring violations are major violations and they occur when no samples are taken or no results are reported during a compliance period. A major monitoring violation for the surface water treatment rule occurs when at least 90% of the required samples are not taken or results are not reported during the compliance period.

**Organic Contaminants:** Carbon-based compounds, such as industrial solvents and pesticides. These contaminants generally get into water through runoff from cropland or discharge from factories. EPA has set legal limits on 54 organic contaminants that are to be reported [40 CFR 141.61].

**Radionuclides:** Radioactive particles which can occur naturally in water or result from human activity. EPA has set legal limits on four types of radionuclides: radium-226, radium-228, gross alpha, and beta particle/photon radioactivity [40 CFR 141]. Violations for these contaminants are to be reported using the following three categories:

*Gross alpha:* SDWIS Contaminant Code 4000 for alpha radiation above MCL of 15 picocuries/liter. Gross alpha includes radium-226 but excludes

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radon and uranium.

*Combined radium-226 and radium-228:* SDWIS Contaminant Code 4010 for combined radiation from these two isotopes above MCL of 5 pCi/L.

*Gross beta:* SDWIS Contaminant Code 4101 for beta particle and photon radioactivity from man-made radionuclides above 4 millirem/year.

**Reporting Interval:** The reporting interval for violations to be included in the first PWS Annual Compliance Report, which is to be submitted to EPA by January 1, 1998, is from January 1, 1996 through December 31, 1996. This interval will change for future annual reports. See guidance language for these intervals.

**SDWIS Code:** Specific numeric codes from the Safe Drinking Water Information System (SDWIS) have been assigned to each violation type included in this report. The violations to be reported include exceeding contaminant MCLs, failure to comply with treatment requirements, and failure to meet monitoring and reporting requirements. Four-digit SDWIS Contaminant Codes have also been included in the chart for specific MCL contaminants.

**Surface Water Treatment Rule:** The Surface Water Treatment Rule establishes criteria under which water systems supplied by surface water sources, or ground water sources under the direct influence of surface water, must filter and disinfect their water [40 CFR 141, Subpart H]. Violations of the “Surface Water Treatment Rule” are to be reported for the following four categories:

*Monitoring, routine/repeat (for filtered systems):* SDWIS Violation Code 36 indicates a system’s failure to carry out required tests, or to report the results of those tests.

*Treatment techniques (for filtered systems):* SDWIS Violation Code 41 shows a system’s failure to properly treat its water.

*Monitoring, routine/repeat (for unfiltered systems):* SDWIS Violation Code 31 indicates a system’s failure to carry out required water tests, or to report the results of those tests.

*Failure to filter (for unfiltered systems):* SDWIS Violation Code 42 shows a system’s failure to properly treat its water. Data for this violation code will be supplied to the States by EPA.

**Total Coliform Rule (TCR):** The Total Coliform Rule establishes regulations for microbiological contaminants in drinking water. These contaminants can cause short-term health problems. If no samples are collected during the one month compliance period, a significant monitoring violation occurs. States are to report four categories of violations:

*Acute MCL violation:* SDWIS Violation Code 21 indicates that the system found fecal coliform or E. coli, potentially harmful bacteria, in its water,

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thereby violating the rule.

*Non-acute MCL violation:* SDWIS Violation Code 22 indicates that the system found total coliform in samples of its water at a frequency or at a level that violates the rule. For systems collecting fewer than 40 samples per month, more than one positive sample for total coliform is a violation. For systems collecting 40 or more samples per month, more than 5% of the samples positive for total coliform is a violation.

*Major routine and follow-up monitoring:* SDWIS Violation Codes 23 AND 25 show that a system did not perform any monitoring. [One number is to be reported for the sum of violations in these two categories.]

*Sanitary Survey:* SDWIS Violation Code 28 indicates a major monitoring violation if a system fails to collect 5 routine monthly samples if sanitary survey is not performed.

**Treatment Techniques:** A water disinfection process that EPA requires instead of an MCL for contaminants that laboratories cannot adequately measure. Failure to meet other operational and system requirements under the Surface Water Treatment and the Lead and Copper Rules have also been included in this category of violation for purposes of this report.

**Unfiltered Systems:** Water systems that do not need to filter their water before disinfecting it because the source is very clean [40 CFR, Subpart H].

**Violation:** A failure to meet any state or federal drinking water regulation.